No. 200400125

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

DLF International Seeds and Rutgers,
The State University of New Jersey

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC [illegible]ENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE [illegible]TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR [illegible]G IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE [illegible]POSES, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PR[illegible] THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

FESCUE, TALL

'Raptor'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this seventh day of February, in the year two thousand and eight.*

Attest:

Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

[illegible] of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions* — Form Approved - OMB No. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE
(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF OWNER
DLF International Seeds and Rutgers, The State University of New Jersey (1/8/2008 BS)

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
CIS-TF 33

3. VARIETY NAME
Raptor

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
PO Box 229
Halsey, OR 97348
USA

5. TELEPHONE *(Include area code)*
(541) 369-2251

6. FAX *(Include area code)*
(541) 369-2640

FOR OFFICIAL USE ONLY

PVPO NUMBER
200400125

FILING DATE
February 23, 2004

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
Corporation

8. IF INCORPORATED, GIVE STATE OF INCORPORATION
OR

9. DATE OF INCORPORATION
1972

10. NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
Stephen W. Johnson
DLF International Seeds
PO Box 229
Halsey, OR 97348

FEES RECEIVED

FILING AND EXAMINATION FEES:
$ 3652.00
DATE 2/23/04

CERTIFICATION FEE:
$ 768.00
DATE 1/2/2008

11. TELEPHONE *(Include area code)*
(541) 369-2251

12. FAX *(Include area code)*
(541) 369-2640

13. E-MAIL
STEVEJ@intlseed.com

14. CROP KIND *(Common Name)*
Tall Fescue

16. FAMILY NAME *(Botanical)*
Gramineae (Poaceae)

15. GENUS AND SPECIES NAME OF CROP
Festuca arundinacea

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☑ NO

18. DOES THE VARIETY CONTAIN ANY TRANSGENES? ***(OPTIONAL)***
☐ YES ☑ NO
IF SO, PLEASE GIVE THE ASSIGNED USDA-APHIS REFERENCE NUMBER FOR THE APPROVED PETITION TO DEREGULATE THE GENETICALLY MODIFIED PLANT FOR COMMERICALIZATION. _____

19. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED
(Follow instructions on reverse)

a. ☑ Exhibit A. Origin and Breeding History of the Variety
b. ☑ Exhibit B. Statement of Distinctness
c. ☑ Exhibit C. Objective Description of Variety
d. ☑ Exhibit D. Additional Description of the Variety *(Optional)*
e. ☑ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ☑ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☑ Filing and Examination Fee ($3,652), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes", answer items 21 and 22 below)* ☑ NO *(If "no", go to item 23)*

21. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF CLASSES?
☑ YES ☐ NO
IF YES, WHICH CLASSES? ☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

22. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☑ YES ☐ NO
IF YES, SPECIFY THE NUMBER 1,2,3, etc. FOR EACH CLASS.
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED
(If additional explanation is necessary, please use the space indicated on the reverse.)

23. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☑ YES ☐ NO Date of first commercial sale: September 2, 2003.
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*
(BS: 9/2/2007 per applicant's authorization)

24. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☑ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

25. The owners declare that a viable sample of basic seed of the variety has been furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER		SIGNATURE OF OWNER	
Stephen W. Johnson			
NAME *(Please print or type)*		NAME *(Please print or type)*	
Stephen W. Johnson			
CAPACITY OR TITLE	DATE	CAPACITY OR TITLE	DATE
Director of Research	02/18/2004		

(See reverse for instructions and information collection burden statement)

#200400125

EXHIBIT A

Origin and Breeding history of Raptor Tall Fescue

Raptor tall fescue was developed by DLF International Seeds using germplasm obtained from the New Jersey Agricultural Experiment Station. It is a medium low-growing, turf-type variety with a rich dark green color. Raptor was selected from the maternal progenies of 19 clones. Six similar and related clones served as additional pollen parents.

The parental germlasm of Raptor traces its origin to plants selected from old turfs of the United States starting in 1962 and subjected to many cycles of phenotypic and genotypic selection. Attractive plants were selected from Bayonne, Cape May, Elizabeth, Jersey City and Princeton, New Jersey; Lexington, Kentucky; Athens, Atlanta, Macon and Millegeville, Georgia; eastern North Carolina; Philadelphia, Pennsylvania; Nashville and Chattanooga, Tennessee; Dallas and Fort Worth, Texas; Preston Idaho; Baltimore, Maryland and Cincinnati, Ohio. The origins of selected plants was unknown. Each selected plant appeared to have developed from a single seedling which had persisted and grown over a period of many years. Many were over one meter in diameter. In addition, a portion of the parental germplasm of Raptor traces to plants related to Rebel tall fescue. However, most of the germplasm used to develop Rebel comes from plants selected from old turfs in New Jersey starting in 1962.

Promising plants from old turfs were evaluated in mowed clonal tests, spaced-plant nurseries, and single-plant progeny trials under closely mowed turf maintenance. Seedling populations were often screened for disease, an attractive, rich dark green color, abundant tillers and slow growth under cool, short-day green house conditions. Intercrosses of the best performing plants were then subjected to additional cycles of population improvement often including population backcrossing with recurrent phenotypic and genotypic selection.

Large numbers of single-plant progenies were seeded in turfgrass evaluation trials at the Plant Science Research and Extension Farm at Adelphia, New Jersey during the late summers of 1991, 1992, 1993, 1994, 1995 and 1996. An additional test was established at the Rutgers turfgrasss research facility in New Brunswick, NJ in 1992. Following periods of summer stress due to heat, drought and disease in 1996 and 1997, plants were selected from the best performing single-plant progeny turf plots. Selection of progenies was based on performance records as well as appearance at the time the plants were selected from these progeny plots. Selection of plants from each progeny was based on an attractive dark green color, medium-fine leaves, abundant tillering, and freedom from disease. Selected plants were transferred to a greenhouse and subsequently established to the spaced-plant field nurseries at Adelphia in 1996 and the spring of 1997. Two nurseries were established in 1996 from the best performing turf plots from the 1992 tall fescue test at North Brunswick, and the 1991, 1993, and 1995 tests at Adelphia, totaling 5,100 plants. These were selected from 2065 single-plot progenies from 25 different populations. In addition, one nursery was established in the spring of 1997 consisting of 2500 plants, was selected from the best performing turf plots from the 1995 and 1996 tall

fescue tests at Adelphia. These were chosen from 2085 plots from 21 different populations. In the spring of 1998, twenty-five plants were selected from these nurseries for characteristics such as medium maturity, dark green color, high shoot density, semi-dwarf growth habit, freedom from disease and high seed yield potential and moved, prior to anthesis, to an isolated crossing block at Adelphia. Nineteen plants fromm 14 different lines were harvested from the crossing block for high seed yield, excellent floret fertility and freedom from disease. In the fall of 1998, one turf plot of each line was established at Adelphia, NJ and 2 grams of seed from each plant was sent to DLF International Seeds, Inc. for and additional round of selection.

In the fall of 1998 a nursery consisting of three replications of 20 plants each from each of the 19 families was established at DLF International Seeds Research Station near Tangent, Oregon. From the fall of 1998 through the spring of 2000 the nursery was observed and plants with light green color, coarse leaf texture and susceptibility to leaf spot diseases were removed. In total approximately 50% of the 1710 plants in the nursery were removed. Then prior to flowering in the summer of 2000 seven of the families were mowed down because of poor family performance in progeny turf plots. The remaining 12 families were allowed to inter-pollinate. After seed ripening the families were harvested and cleaned separately. A bulk consisting of equal parts of each of the 12 families was then made. This seed was the first breeder seed of the variety. A portion of this seed is maintained under controlled conditions by DLF International Seeds.

The variety Raptor has appeared uniform and stable during multiplication from breeder to foundation generations during the years 2001-2003. Raptor has a small (<0.5%) percentage of variants that are somewhat taller and coarser than the rest of the population. The percentage of these plants appeared to be uniform and stable when seed was multiplied from breeder to foundation generation.

EXHIBIT B

Statement of Distinctness

Raptor tall fescue (*Festuca arundinacea*) is a medium maturity variety with a short mature plant height.

Raptor is most similar to Bingo. Raptor differs from this variety in characteristics including, but not necessarily limited to the following:

1) Raptor has a significantly longer panicle length than Bingo when grown in western Oregon (20.9 cm vs. 16.7 cm) (see Exhibit D Table 3).

EXHIBIT C
(TALL & MEADOW FESCUES)

U.S. DEPARTMENT OF AGRICULTURE
PLANT VARIETY PROTECTION OFFICE, AMS, USDA
NATIONAL AGRICULTURAL LIBRARY Bldg., Rm. 500
10301 BALTIMORE Blvd.
BELTSVILLE, MD 20705

OBJECTIVE DESCRIPTION OF VARIETY
TALL & MEADOW FESCUES
(*Festuca* spp.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
DLF International Seeds and Rutgers, The State University of New Jersey (1/8/2008 BT)	CIS-TF 33	Raptor

ADDRESS (Street and No., or R.F.D. No., City, State, and ZIP Code)

PO Box 229
Halsey, OR 97348

FOR OFFICIAL USE ONLY
PVPO NUMBER

200400125

Place the appropriate number that describes the varietal characteristic of this variety in the boxes below. Use leading zeroes when necessary (e.g. 089). Characteristics described, including numerical measurements, should represent those that are typical for the variety. Measured data should be for SPACED PLANTS. Royal Horticultural Society or any recognized color fan may be used to determine plant colors. Characteristics marked with an asterisk * are characteristics which should be recorded.

* 1. SPECIES: (With comparison varieties, use varieties within the species of the application variety)

__1__ 1 = *F. arundinacea* (Tall)

Turf Types

1 = Kentucky 31 2 = Rebel 3 = Olympic 4 = Bonanza 5 = Arid 6 = Rebel II
7 = Shortstop 8 = Silverado 9 = Rebel Jr. 10 = Mini Mustang 11 = Crewcut 12 = Bonsai

Forage Types

20 = Kentucky 31 21 = Martin 22 = Forager 23 = Mozark
24 = Kenhy 25 = AU Triumph 26 = Fawn 27 = Cajun

_____ 2 = *F. pratensis* (Meadow)

30 = Admira 31 = Beaumont 32 = Comtessa 33 = Ensign 34 = Trader

* 2. CYTOLOGY:

__42__ Chromosome Number

3. ADAPTATION: (0 = Not Tested; 1 = Not Adapted; 2 = Adapted)

_____Transition Zone __X__West _____ Northeast _____ Other (Specify):_____

* 4. MATURITY: (Date First Headed, 10% of Panicle Emergence)

__5__ Maturity Class 1 = Very early ( ) 2 = AU Triumph 3 = Early (Fawn) 4 = K31, Kenhy 5 = Medium (Rebel)
6 = Bonanza 7 = Late (Silverado) 8 = 9 = Very late

Date Headed __May 26__ Location __Western Oregon__

__3__ Days earlier than __4__

Maturity same as __6__ Comparison Variety

__5__ Days later than __1__

* 5. MATURE PLANT HEIGHT CM: (Average of 100 culms from crown to top of panicle, if panicle is nodding, straighten)

__ 6 3. 8 cm Height

_2 3. 2 cm shorter than 10

Height same as 7 Comparison Variety

__ __.__ cm taller than ___

* INTERNODE LENGTH CM: (First internode subtending the flag leaf)

2004 00 125

_3 4. 8 cm Internode length

1 0. 4 cm shorter than Southern Comfort (BT: 9/21/2007)

Length same as Kalahari ___ Comparison variety

__ __.__ cm longer than ___

* HEIGHT AT EAR EMERGENCE CM: (Flag leaf height from crown to flag leaf node)

_2 6. 5 cm Height

__ 8. 6 cm shorter than 11

Height same as 9 Comparison Variety

__ 1. 3 cm taller than 12

---

* 6. GROWTH HABIT: (Mature Plants)

4 1 = Prostrate ( ) 3 = Semiprostrate ( ) 5 = Horizontal ( )
7 = Semierect (Rebel) 9 = Erect (Mini Mustang)

---

* 7. RHIZOMES (Psuedo):

__ __.__ mm Length 2 1 = Absent ( ) 2 = Rare (Rebel) 3 = Common ( )

---

* 8. LEAF BLADE: (Tiller leaves/ turf color)

* 6.4 Color: 1 = Light green ( ) 3 = Medium light green ( ) 5 = Green ( )
7 = Medium dark green ( ) 9 = Very dark green ( )
_____ Specify rating of comparison variety Bonsai = 6.5

* 3 Anthocyanin: 1 = Absent ( ) 9 = Present ( )

* 1 Basal Hairs: 1 = Absent ( ) 9 = Present ( )

* 5 Margins: 1 = Smooth ( ) 5 = Semi-rough ( ) 9 = Rough ( )

* 6 Width Class: 1 = Very coarse ( ) 3 = Coarse ( ) 5 = Medium ( )
7 = Fine (Bonsai) 9 = Very Fine ( )

* TILLER LEAF LENGTH CM: (First leaf subtending the flag leaf)

_1 2. 4 cm Tiller Leaf Length

_8. 2 cm shorter than 11

Length same as ___ Comparison Variety

__.__ cm longer than ___

* TILLER LEAF WIDTH MM:

_6. 0 mm Tiller Leaf Width

1. 5 mm narrower than 8 (BT: 9/21/2007)

Width same as 12 Comparison variety

__.__ mm wider than ___

---

8. LEAF BLADE: (continued)

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FLAG LEAF LENGTH CM:

_1 _1._2 cm Flag Leaf Length

2 3._8 cm shorter than (10) Mini Mustang (BTS 9/21/2007)

Length same as Bingo ___ Comparison Variety

__.__ cm longer than ___

FLAG LEAF WIDTH MM:

_5._1 mm Flag Leaf Width

_1._9 mm narrower than _4_

Width same as ___ Comparison variety

__.__ mm wider than ___

---

* 9. LEAF SHEATH: (Basal Portion)

*_2_ Anthocyanin (seedling): 1 = Absent (K31) 9 = Present ( )

*_2_ Auricle Hairiness: 1 = Absent ( ) 9 = Present ( )

---

* 10. PANICLE: (At seed maturity except where noted.)

*_4_ Shape: 1 = Narrow-tapering ( ) 5 = Ovate ( ) 7 = Oblong ( ) 9 = Other (specify)

*_5 Type: 1 = Compact (appressed) 5 = Intermediate ( ) 7 = Open ( ) 9 = Other (specify)

*_9_ Orientation: 1 = Nodding ( ) 9 = Erect ( )

*_5_ Branch Pubescence: 1 = Glabrous ( ) 9 = Pubescent ( )

*_1_ Anther Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green 4 = Purplish 5 = Reddish 6= Other (Specify)

*_2_ Glume Color (At anthesis): 1 = Yellowish Green 2 = Green 3 = Bluish Green 4 = Purplish 5 = Reddish 6= Other (Specify)

*_2_0._9 cm Panicle Length (from base to tip, if nodding, straighten; after anthesis)

_6._9 cm shorter than Kalahari

Length same as _11_ Comparison Variety

_4._0 cm longer than _12

---

* 11. SEED: (With Lemma & Pelea)

*_2_6_4_1 mg per 1000 seeds

_3_4_8 mg less than _12

Weight same as _8_ Comparison Variety

___ mg more than ___

PALEA: (Keels or Margins) _2_ Hairs: 1 = Absent ( ) 5 = Short (Missouri 96) 9 = Long ( )

LEMMA: _3_ Hairs: 1 = Absent (Kenhy) 5 = Several ( ) 9 = Many (Missouri 96)

_6._1 mm Lemma Length (Mature) _1._4 mm Lemma width

_0._6 mm shorter than _8_ __.__ mm narrower than ___

Length same as _9_ Comparison Variety Width same as _8_ Comparison variety

__.__ mm longer than ___ __.__ mm wider than ___

10. PANICLE: (continued)

*AWNS: 9 AWNS: 1 = Absent ( ) 9 = Present (Falcon) 100 % Plants with awns

0. 9 mm Awn length (Of those present.)

__.__ mm Shorter than ___

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Length same as 8 Comparison Variety

__.__ mm Longer than ___

12. DISEASE, INSECT, AND NEMATODE REACTION: (0= Not Tested 1= Least Resistant 9= Most Resistant)

___ Melting-out *Drechslera poae*

___ Leaf Spot *D. siccans*

5 Net Blotch *D. dictyoides*

6 Brown Patch *Rhizoctonia solani*

___ C. Leaf Spot *Cercospora fectucae*

___ Pink Snow Mold *Gerlachia nivalis*

___ Silver Top *F. tricinctum, F. roseum*

7 Other Disease Pink Patch

___ Other Insect

___ Other Nematode

___ Blind Seed *Gloeotinia temulenta*

___ Dollar Spot *Lanzia, Mollerdiscus* spp.

___ Stem Rust *Puccinia graminis*

6 T. Blight *Typhula incarnata*

8 Pythium Blight *Pythium* spp.

___ Powdery Mildew *Erysiphe graminis*

___ Crown Rust *Puccinia coronata*

(9/21/2007 bt: Data added in per applicant's request and verification).

13. ENVIRONMENTAL STRESS

6 Drought Stress 1 = Susceptible ( ) 5 = Tolerant ( )9 = Resistant ( )

___ Shade Stress 1 = Susceptible ( ) 5 = Tolerant ( )9 = Resistant ( )

5 Winter Stress 1 = Susceptible ( ) 5 = Tolerant ( )9 = Resistant ( )

(9/21/2007 bt: Data added in per applicant's request).

14. GIVE VARIETY OR VARIETIES THAT MOST CLOSELY RESEMBLE THE APPLICATION VARIETY. For the following characteristics, indicate the degree of resemblance with the following scale:

1 = Application variety is less than comparison variety 2 = Same as 3 = More than, better, greater, darker, etc.

Character	Varieties	Rating	Character	Varieties	Rating
Leaf Width	Bingo	2	Leaf Color	Bingo	2
Panicle Color			Panicle Shape		
Seed Size	Bingo	2	Cold Injury		
Winter Color			Heat		
Disease					

* 15. EXPERIMENTAL: Give a brief summary of the experimental design utilized to collect the data used on this form. Cultural conditions, number of plants measured and plant spacing must be specified.

Plants were grown near in two test one near Tangent, Oregon the other near Shedd, Oregon in 2002. Trials consisted of 3 replications of each variety with 10 plants per replication. Plants were spaced 1.5 feet apart in a row and rows were spaced 3 feet apart.

EXHIBIT D
Table 1

Heading dates in Julian days of tall fescue varieties grown near Tangent and Shedd Oregon in 2002. Trials consisted of three replications of each variety with 10 plants per replication. Trials were conducted using completely random designs. Plant spacings were 1.5 feet within rows and 3 feet between rows.

VARIETY	Tangent	Shedd	Average
KY-31	142.4	142.1	142.2
Tomahawk	143.5	143.6	143.6
Bingo	146.2	145.3	145.8
Raptor	**147.0**	**146.1**	**146.5**
Mini Mustang	147.6	149.3	148.5
Rebel II	147.6	147.5	147.6
Houndog 5	147.8	148.1	148.0
Rebel Jr.	148.6	149.8	149.2
Crewcut	148.7	148.1	148.4
CIS-TF 67	149.7	149.5	149.6
Southern Comfort	149.9	147.8	148.8
Kalahari	150.0	149.7	149.8
Silverado	150.8	151.2	151.0
Bonanza	150.9	148.3	149.6
CIS-TF 64	152.7	151.3	152.0
Shortstop	153.9	151.7	152.8
Bonsai	154.9	152.8	153.8
LSD @ 0.05	2.0	2.1	

EXHIBIT D
Table 2

Morphological measurements of tall fescue cultivars grown near Tangent and Shedd Oregon in 2002. Trials consisted of three replications of each variety with 10 plants per replication. Plants were spaced 1.5 feet apart within a row and rows were spaced 3 feet apart.

	Canopy Leaf Length (cm)			Plant Height (cm)			Internode Length (cm)			Flag Leaf Height (cm)		
VARIETY	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average
KY-31	41.3	25.9	33.6	117.9	96.5	107.2	56.7	43.4	50.0	55.1	46.1	50.6
Rebel II	34.1	23.9	29.0	109.7	91.1	100.4	55.4	43.9	49.6	47.7	38.9	43.3
Bonanza	33.2	30.0	31.6	98.1	92.0	95.1	51.0	39.6	45.3	46.3	38.1	42.2
Tomahawk	31.6	25.3	28.4	99.8	87.5	93.7	47.0	43.0	45.0	37.3	41.7	39.5
Silverado	29.2	16.5	22.9	90.3	65.4	77.9	43.4	34.1	38.7	35.0	32.3	33.6
Crewcut	28.8	20.1	24.5	99.6	83.0	91.3	45.6	36.7	41.1	40.9	29.4	35.1
Mini Mustang	27.4	23.1	25.3	93.4	80.6	87.0	42.5	38.8	40.6	38.9	30.1	34.5
Houndog 5	27.4	18.6	23.0	97.6	77.7	87.6	46.3	38.0	42.2	43.5	33.1	38.3
Southern Comfort	25.6	15.4	20.5	82.1	66.3	74.2	43.3	36.3	39.8	33.5	26.6	30.1
Kalahari	25.1	16.2	20.7	76.2	61.5	68.9	41.3	31.1	36.2	33.3	23.7	28.5
Rebel Jr	24.2	21.5	22.9	91.1	86.9	89.0	36.7	35.2	36.0	35.4	31.5	33.5
Raptor	**23.5**	**20.2**	**21.8**	**76.4**	**51.2**	**63.8**	**42.1**	**27.4**	**34.8**	**32.8**	**20.1**	**26.5**
TF 65	23.5	14.4	18.9	75.5	65.8	70.7	40.3	32.4	36.3	29.0	25.6	27.3
Bingo	22.2	16.5	19.4	79.4	69.4	74.4	40.8	34.2	37.5	32.7	34.0	33.4
Shortstop	21.9	17.8	19.8	81.9	77.7	79.8	36.8	41.1	38.9	37.5	37.0	37.3
CIS-TF 67	19.5	14.3	16.9	69.7	59.9	64.8	38.9	30.0	34.5	28.9	23.6	26.2
CIS-TF 64	16.6	11.8	14.2	63.3	47.8	55.5	32.4	27.3	29.9	24.6	22.6	23.6
Bonsai	15.5	9.4	12.5	75.6	54.0	64.8	39.8	29.4	34.6	28.2	22.1	25.2
LSD 0.05	3.2	2.1		5.6	3.6		5.5	5.1		5.2	4.1	

EXHIBIT D
Table 3

Morphological measurements of tall fescue cultivars grown near Tangent and Shedd Oregon in 2002. Trials consisted of three replications of each variety with 10 plants per replication. Plants were spaced 1.5 feet apart within a row and rows were spaced 3 feet apart.

	Flag Leaf Length (cm)			Flag Leaf Width (mm)			Tiller Leaf Length (cm)			Tiller Leaf Width (mm)			Panicle Length (cm)		
VARIETY	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average
KY-31	15.5	14.4	15.0	7.0	5.3	6.2	21.4	20.6	21.0	8.8	8.3	8.6	17.4	19.2	18.3
Rebel II	16.0	15.7	15.9	6.5	5.2	5.8	20.2	21.0	20.6	7.9	7.7	7.8	21.3	20.3	20.8
Bonanza	18.7	19.5	19.1	8.0	6.1	7.0	23.1	20.4	21.8	9.5	8.6	9.1	23.2	17.1	20.1
Tomahawk	15.1	11.0	13.1	6.0	4.7	5.3	18.6	17.1	17.8	8.7	5.7	7.2	22.5	19.7	21.1
Silverado	14.5	10.4	12.5	7.2	5.4	6.3	17.4	14.6	16.0	8.4	6.6	7.5	20.3	20.3	20.3
Crewcut	14.1	10.6	12.3	7.2	5.4	6.3	26.7	14.5	20.6	8.4	5.9	7.2	21.6	19.8	20.7
Mini Mustang	13.2	14.7	14.0	5.7	5.4	5.5	16.7	15.7	16.2	6.9	6.6	6.7	20.6	16.8	18.7
Houndog 5	14.1	12.6	13.3	6.7	4.9	5.8	17.8	15.2	16.5	8.5	6.3	7.4	27.0	25.7	26.3
Southern Comfort	13.3	10.3	11.8	6.5	5.1	5.8	16.2	13.2	14.7	7.6	6.8	7.2	14.7	12.4	13.5
Kalahari	13.0	11.6	12.3	6.6	5.1	5.9	15.3	13.6	14.5	7.8	6.9	7.4	26.0	29.7	27.8
Rebel Jr.	14.9	15.7	15.3	6.8	5.6	6.2	19.1	16.3	17.7	8.4	8.1	8.2	25.0	21.1	23.0
Bingo	11.0	10.5	10.7	5.8	5.0	5.4	14.7	15.7	15.2	7.6	7.3	7.5	18.3	15.0	16.7
Shortstop	12.8	15.1	13.9	7.8	5.1	6.4	16.8	15.6	16.2	9.2	5.7	7.4	15.0	12.3	13.6
CIS-TF 67	11.1	10.8	11.0	5.1	4.9	5.0	13.9	10.1	12.0	7.5	5.5	6.5	18.0	17.1	17.6
Raptor	**10.7**	**11.7**	**11.2**	**5.3**	**4.8**	**5.1**	**15.2**	**9.7**	**12.4**	**6.6**	**5.4**	**6.0**	**21.0**	**20.9**	**20.9**
CIS-TF 64	8.5	7.0	7.7	4.7	2.9	3.8	11.9	10.1	11.0	6.4	4.1	5.2	17.6	14.8	16.2
Bonsai	8.7	6.2	7.5	5.4	3.1	4.2	10.7	8.7	9.7	6.5	4.7	5.6	17.6	16.3	16.9
LSD 0.05	1.9	2.3		0.8	0.9		4.3	2.6		1.1	1.0		2.5	2.8	

EXHIBIT D
Table 4.

2002
Leaf characteristics of tall fescue varieties grown near Tangent and Shedd Oregon
(BT: 9/21/2007 per applicant's request)

	Leaf Color (1-9: 9=dark green)			Leaf Width (1-9: 9=very narrow)			% Plants with Leaf Anthocyanin		
NAME	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average
CIS-TF 64	7.2	6.9	7.0	7.1	7.0	7.0	25.3	23.3	24.3
CIS-TF 67	7.2	6.9	7.0	6.3	6.4	6.4	16.7	20.7	18.7
Raptor	**6.6**	**6.2**	**6.4**	**6.0**	**6.4**	**6.2**	**24.7**	**17.0**	**20.8**
Bonsai	6.5	6.5	6.5	7.1	6.9	7.0	10.0	8.3	9.2
Bingo	6.3	6.2	6.2	6.2	6.0	6.1	14.7	29.0	21.8
Kalahari	6.2	6.1	6.2	6.0	5.5	5.7	8.3	26.7	17.5
Silverado	6.0	5.4	5.7	5.4	5.3	5.4	17.7	20.0	18.8
Tomahawk	6.0	5.7	5.8	5.6	5.0	5.3	38.3	31.3	34.8
Houndog 5	5.8	4.6	5.2	5.3	4.6	4.9	37.0	27.7	32.3
Shortstop	5.8	4.6	5.2	5.4	5.0	5.2	19.0	26.7	22.8
Southern Comfort	5.8	5.8	5.8	5.7	5.5	5.6	30.3	41.0	35.7
Crewcut	5.5	5.0	5.3	5.2	5.6	5.4	31.0	54.3	42.7
Rebel Jr.	5.5	5.2	5.4	5.2	5.0	5.1	33.0	59.0	46.0
Mini Mustang	5.4	5.0	5.2	5.4	4.9	5.1	29.3	32.3	30.8
Rebel II	5.3	5.3	5.3	5.0	4.5	4.8	40.0	60.7	50.3
Bonanza	4.8	4.4	4.6	4.8	4.0	4.4	48.3	60.0	54.2
KY-31	4.2	2.7	3.4	3.4	3.1	3.3	74.3	52.3	63.3
LSD @ 0.05	0.6	0.6		0.6	0.5		23.2	15.0	

EXHIBIT D
Table 5.

2002 Panicle Traits of Tall Fescue Varieties Grown Near Tangent and Shedd, Oregon

NAME	% of Plants with Erect Panicles			% of Plants with Panicle Branch Pubescence		
	Tangent	Shedd	Average	Tangent	Shedd	Average
CIS-TF 64	100.0	100.0	100.0	32.7	18.3	25.5
Raptor	**100.0**	**93.3**	**96.7**	**72.7**	**38.0**	**55.3**
Bingo	100.0	82.0	91.0	59.0	30.7	44.8
Rebel Jr.	88.0	68.3	78.2	62.3	47.7	55.0
Bonsai	86.7	87.7	87.2	43.3	25.0	34.2
Mini Mustang	83.3	47.7	65.5	61.3	29.3	45.3
Kalahari	80.0	96.7	88.3	83.3	53.3	68.3
CIS-TF 67	70.0	89.7	79.8	49.3	30.7	40.0
Shortstop	67.7	58.0	62.8	54.7	48.7	51.7
Southern Comfort	64.0	82.3	73.2	68.3	46.7	57.5
Houndog 5	53.0	51.7	52.3	38.7	17.3	28.0
Bonanza	52.7	20.7	36.7	59.3	52.3	55.8
Silverado	48.3	67.0	57.7	81.0	39.7	60.3
Tomahawk	39.7	57.7	48.7	62.3	58.7	60.5
Crewcut	39.7	53.3	46.5	45.7	46.7	46.2
KY-31	34.7	24.7	29.7	52.3	30.3	41.3
Rebel II	30.7	36.0	33.3	52.3	39.3	45.8
LSD @ 0.05	18.0	17.4		19.9	15.9	

EXHIBIT D
Table 6.

2002 Seed characteristics of tall fescue varieties grown near Tangent and Shedd, Oregon

NAME	Mg per 1000 seeds			Palea Hairs (1-9; 1=abesent to 9=long)			Lemma Hairs (1-9; 1=absent to 9=many)			Lemma Length (mm)			Lemma Width (mm)			Awn Length (mm)		
	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average	Tangent	Shedd	Average
Tomahawk	2957.8	3662.0	3309.9	2.0	2.6	2.3	2.5	3.2	2.8	7.2	7.2	7.2	1.5	1.5	1.5	0.7	0.8	0.8
KY-31	2876.9	3851.7	3364.3	1.7	2.6	2.1	2.0	4.3	3.1	6.1	6.0	6.0	1.3	1.4	1.4	0.7	0.7	0.7
Bonanza	2813.4	3164.8	2989.1	1.7	3.1	2.4	3.1	3.6	3.3	6.7	7.2	7.0	1.4	1.7	1.6	0.7	0.9	0.8
Rebel II	2793.1	2934.0	2863.5	2.3	2.6	2.4	3.1	3.6	3.3	6.5	6.3	6.4	1.5	1.4	1.4	0.7	1.0	0.8
Shortstop	2629.2	2508.0	2568.6	1.4	2.3	1.9	2.4	3.2	2.8	6.3	6.4	6.4	1.4	1.4	1.4	0.9	0.9	0.9
Silverado	2564.4	2702.4	2633.4	1.5	2.2	1.9	2.0	3.0	2.5	6.9	6.6	6.7	1.5	1.5	1.5	1.1	0.9	1.0
Bingo	2546.5	2800.3	2673.4	1.7	2.9	2.3	2.7	3.9	3.3	6.2	6.5	6.4	1.4	1.4	1.4	1.0	1.0	1.0
Raptor	**2535.2**	**2747.6**	**2641.4**	**2.6**	**2.3**	**2.4**	**3.0**	**3.8**	**3.4**	**6.3**	**5.9**	**6.1**	**1.4**	**1.5**	**1.4**	**0.9**	**0.9**	**0.9**
CIS-TF 64	2469.1	2553.6	2511.3	2.0	2.9	2.5	4.3	4.4	4.3	5.7	5.6	5.7	1.4	1.4	1.4	0.8	0.7	0.7
Rebel Jr.	2456.3	2073.1	2264.7	1.4	2.9	2.2	2.2	3.0	2.6	6.4	6.2	6.3	1.4	1.4	1.4	1.2	0.9	1.0
Southern Comfort	2451.4	2575.5	2513.5	1.3	1.8	1.6	2.1	2.8	2.4	6.5	6.2	6.4	1.3	1.3	1.3	1.1	0.8	1.0
Crewcut	2428.2	2611.1	2519.7	1.1	2.1	1.6	1.8	3.6	2.7	6.6	6.6	6.6	1.4	1.5	1.4	0.9	1.2	1.0
Kalahari	2427.6	2718.9	2573.3	2.2	3.7	3.0	3.1	4.3	3.7	6.2	6.3	6.2	1.4	1.4	1.4	1.2	1.0	1.1
Mini Mustang	2406.1	2534.0	2470.1	2.0	2.7	2.4	4.3	3.3	3.8	6.4	7.3	6.8	1.4	1.5	1.4	1.1	1.5	1.3
CIS-TF 67	2390.3	2616.0	2503.1	2.3	3.3	2.8	4.1	3.9	4.0	6.3	6.2	6.3	1.4	1.4	1.4	0.9	0.7	0.8
Bonsai	2376.7	2259.0	2317.9	1.7	2.5	2.1	2.3	3.5	2.9	6.8	6.8	6.8	1.4	1.4	1.4	0.9	1.0	0.9
Houndog 5	2361.6	2738.0	2549.8	1.4	2.3	1.9	3.2	3.6	3.4	6.4	6.6	6.5	1.4	1.4	1.4	0.6	1.0	0.8
LSD @ 0.05	204.5	381.8		0.7	0.7		0.8	0.7		0.4	0.6		0.1	0.1		0.4	0.3	

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

Application is required in order to determine if a plant variety protection certificate is to be issued *(7 U.S.C. 2421)*. The information is held confidential until the certificate is issued *(7 U.S.C. 2426)*.

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
DLF International Seeds and Rutgers, The State University of New Jersey (1/8/2008 BT)	CIS-TF 33	Raptor
4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	**5. TELEPHONE** *(Include area code)*	**6. FAX** *(Include area code)*
PO Box 229 Halsey, OR 97348 USA	(541) 369-2251	(541) 369-2640
	7. PVPO NUMBER 200400125	

8. Does the applicant own all rights to the variety? Mark an "X" in the appropriate block. **If no, please explain.** ☑ **YES** ☐ **NO**

9. Is the applicant (individual or company) a U.S. national or a U.S. based company? **If no, give name of country.** ☑ **YES** ☐ **NO**

10. Is the applicant the original owner? ☑ **YES** ☐ **NO** **If no, please answer one of the following:**

a. If the original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. National(s)?
☑ **YES** ☐ **NO** **If no, give name of country**

b. If the original rights to variety were owned by a company(ies), is (are) the original owner(s) a U.S. based company?
☑ **YES** ☐ **NO** **If no, give name of country**

11. Additional explanation on ownership *(Trace ownership from original breeder to current owner. Use the reverse for extra space if needed)*:

Raptor tall fescue was developed by DLF International Seeds using germplasm obtained from the New Jersey Agricultural Experiment Station.

PLEASE NOTE:

Plant variety protection can only be afforded to the owners (not licensees) who meet the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed the final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definitions.